

## ITS PROJECT APPLICATION FORM FY 2009-2013 TIP

**General Instructions:** This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2009-2013 MAG Transportation Improvement Program. Currently funding is available only for **FY 2013**.

Separate application forms are available for bicycle, pedestrian, air quality, and transit projects. Freeway, street and rail transit projects will be programmed in a separate process.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **PLEASE NOTE: Part C is only available electronically.** It is available at: <http://www.mag.maricopa.gov/project.cms?item=413>, or you can contact Leo Luo: [lluo@mag.maricopa.gov](mailto:lluo@mag.maricopa.gov), and he will send you the electronic file.

**Deadlines and Transmittal Instructions:** All sections should be completed and returned to MAG Offices by **5:00 p.m. September 7, 2007**. Please e-mail Judy Tadlock at MAG, [jtadlock@mag.maricopa.gov](mailto:jtadlock@mag.maricopa.gov) this application (Part A & B). Part C is only available electronically as noted above. Please e-mail Leo Luo the completed Part C, excel file to [lluo@mag.maricopa.gov](mailto:lluo@mag.maricopa.gov). The mailing address and FAX number for the MAG offices is:

ATTN: Judy Tadlock  
Maricopa Association of Governments  
302 North 1<sup>st</sup> Avenue, Suite 300  
Phoenix, Arizona 85003  
FAX Number: (602) 254-6490

**Electronic Download Information:** A downloadable version of these forms in Microsoft Word is available on the MAG website at <http://www.mag.maricopa.gov/project.cms?item=413>. If requested, MAG staff will also provide these forms via e-mail or FAX.

**MAG Contact Information:** If you have any questions, please contact Stephen Tate or Eileen Yazzie at (602) 254-6300 or at [state@mag.maricopa.gov](mailto:state@mag.maricopa.gov).

**Agency Contact Information:** Please complete the following contact information for each project, so that we may contact you should we need additional information.

1. Name of the Agency Contact for the Project Request: <b>Jim Decker or Christine Warren</b>	2. Telephone: 480-350-8320 or 480-858-2060
3. E-mail <a href="mailto:Jim_decker@tempe.gov">Jim_decker@tempe.gov</a> <a href="mailto:Christine_warren@tempe.gov">Christine_warren@tempe.gov</a>	4. Date: <b>09/04/2007</b>

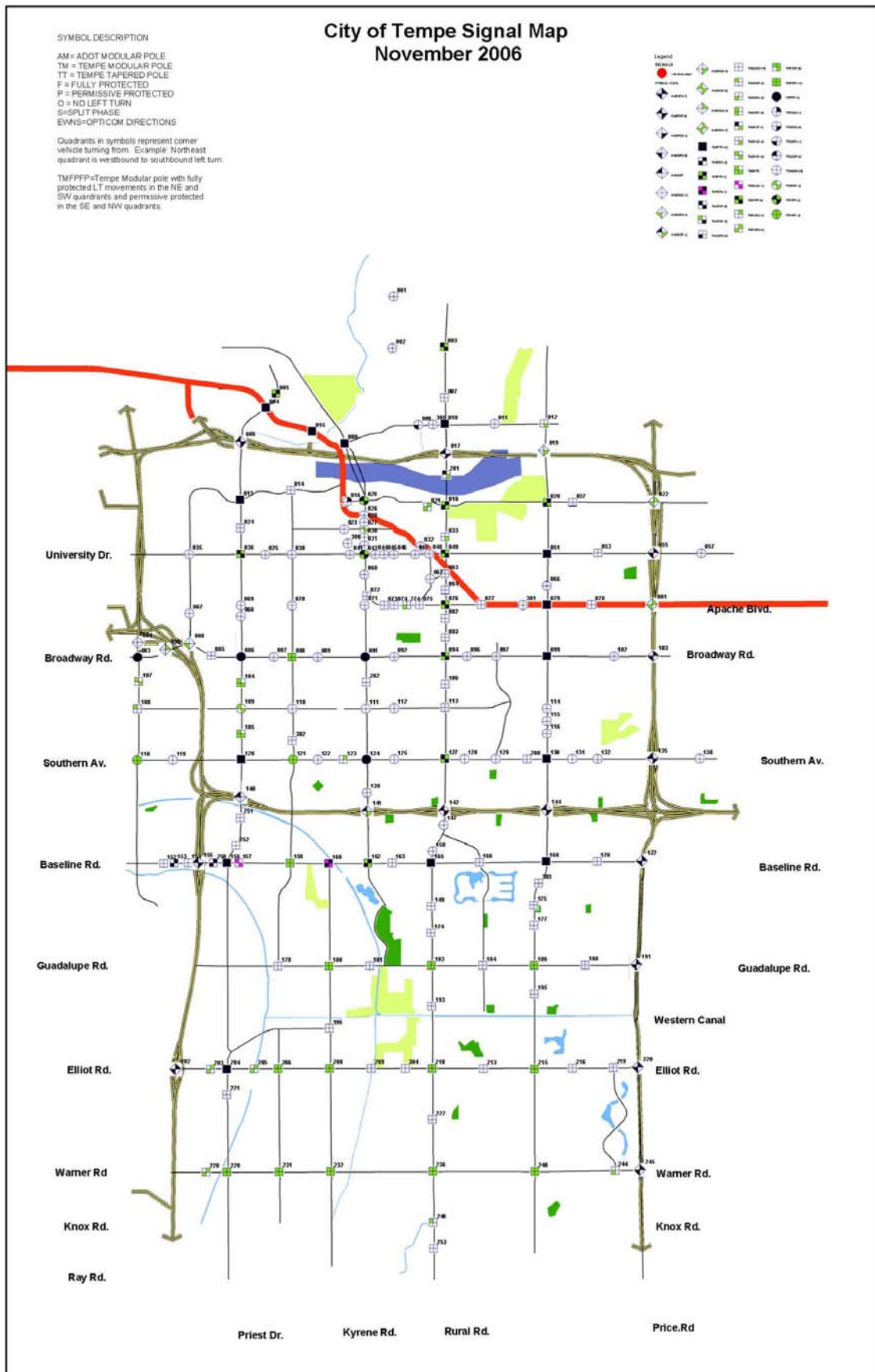
## ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP

### Part A: Project TIP Listing Information and Description

#### Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:  <b>City of Tempe</b>	2. Year (Please check box):  <input checked="" type="checkbox"/> FY 2013
3. Project Location (The project limits if applicable):  <b>Citywide</b>	
4. Type of Work (Description of the work to be performed):  <b>Procure and Install Traffic Control Cabinets and Hardware – Phase 1 of 3</b>	
5. Amount of Federal Funds Requested (This amount cannot exceed <b>70.0</b> percent of the total cost of the project.):  <b>\$539,000</b>	6. Type of Federal Funds Requested (Please check box.):  <input type="checkbox"/> MAG STP <input checked="" type="checkbox"/> CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than <b>30.0</b> percent of the total cost of the project.):  <b>\$231,000</b>	8. Type of Local Funds to be Used: (Please check <u>only one</u> box.):  <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"><input checked="" type="checkbox"/> HURF</div> <div style="width: 50%;"><input type="checkbox"/> Impact Fees</div> <div style="width: 50%;"><input type="checkbox"/> General Fund</div> <div style="width: 50%;"><input type="checkbox"/> Bond Proceeds</div> <div style="width: 50%;"><input type="checkbox"/> Sales Tax</div> <div style="width: 50%;"><input type="checkbox"/> Private</div> <div style="width: 50%;"><input type="checkbox"/> Property Tax</div> <div style="width: 50%;"><input type="checkbox"/> Other, Please specify: _____</div> </div>
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):  <b>\$770,000.00</b>	
10. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below. <b>See next page</b>	



## ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP

### Part B: CMS and CMAQ Data

**General Instructions:** In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

#### Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type:  <b>Citywide (ave 35,000)</b>	2. Name of the Roadway Section Used for the ADT Estimate:  <b>Various Streets</b>	3. Type of Facility to be Improved (Check only <u>one</u> box):  <input type="checkbox"/> Arterial > 4 legs (e.g. Grand) <input checked="" type="checkbox"/> Arterial Street <input type="checkbox"/> Collector Street <input type="checkbox"/> Other
4. Number of <b>Through</b> Lanes Currently on the Facility Prior to Project Completion (Do <u>not</u> include right, left or center turn lanes):	5. Number of <b>Through</b> Lanes on the Facility After the Project is Completed (Do <u>not</u> include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility: <b>1N</b>	8. Range Coordinate of the Midpoint of the Facility: <b>4E</b>	9. Section Coordinate of the Midpoint of the Facility:  <div style="text-align: center;">15</div>

## ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP

### Part B: CMS and CMAQ Data

10. If the project improves traffic signal coordination, please do the following:

- a. Enter the pre-improvement (current) traffic speed of the traffic corridor: 35
- b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
<input type="checkbox"/> Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
<input type="checkbox"/> Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
<input type="checkbox"/> Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
<input checked="" type="checkbox"/> Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
<input type="checkbox"/> Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
<input type="checkbox"/> Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

11. Other Project Information: (Check as many as are applicable):

- ☒ Includes Traffic Signal Improvements for a Single Agency
- ☒ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☐ Includes FMS Improvements
- ☐ The Project Conforms to Local Land Use Plans
- ☒ The facility is on the adopted MAG Roads of Regional Significance Network
- ☐ Adds Traffic Signals that increase pedestrian crossing time for seniors

12. Management System (Please check only one box)

- ☒ Congestion Management System (CMS)      ☐ Safety Management System (SMS)
- ☐ Bridge Management System (BMS)      ☐ Intermodal Management System (IMS)
- ☐ Pavement Management System (PMS)      ☐ Other
- ☐ Public Transportation Management System (PTMS)

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

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## Part C: MAG Technical Committee Additional Information

This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **Part C is only available electronically.** It is available at: <http://www.mag.maricopa.gov/project.cms?item=413>, or you can contact Leo Luo: [lluo@mag.maricopa.gov](mailto:lluo@mag.maricopa.gov), and he will send you the electronic file.

### Contact Information

Please contact Sarath Joshua or Leo Luo at (602) 254-6300 or [sjoshua@mag.maricopa.gov](mailto:sjoshua@mag.maricopa.gov), [lluo@mag.maricopa.gov](mailto:lluo@mag.maricopa.gov) for additional information or questions.

**FY 2009 - 2013 TIP - Programming 2013  
MAG ITS Project Data Form**

Please enter project data **ONLY** in highlighted cells, save the file with the lead agency name in it - ie. Mesa ITS Projects.xls

Submit this Excel workbook to MAG via email to: LLUO@MAG.MARICOPA.GOV

Please use one worksheet per project, with the tab at the bottom indicating agency priority

Links to various websites are provided for additional information and help

The worksheet titled "Example" shows an example on how to enter Data in the highlighted areas. If errors are detected alerts will pop-up in **red text**.

The worksheet titled "HELP" shows how to figure out your project's ITS Subsystems & Architecture Flows

*Please enter required information in highlighted cells*

**A. Project Title & Sponsor**

Lead Agency	City of Tempe
Other Partnering Agencies	N/A
ITS Project Title:	Procure & Install Traffic Control Cabinets & Hardware - Phase 1 of 3

**B. Project Goals & Objectives**

**Project Goals:**

Tempe operates and maintains 200 traffic signals including all ADOT traffic interchanges within the city boundaries. Current traffic signal control cabinets were installed in 1995 through 1998 and will be approaching the typical product life cycle in the year 2013. The City of Tempe, as part of a continuing transportation management program is proposing to replace its inventory of traffic signal control cabinets in a three-phased process. This proposed project constitutes Phase 1 of 3, which will serve to replace one-third of the city's traffic signal control cabinets. As a practical matter, the inventory is aging and must eventually be replaced to minimize maintenance calls and to foster a high quality preventative maintenance program.

**Objectives:**

This project will allow Tempe to replace its aging traffic signal cabinet inventory with new signal cabinets, which will improve the reliability and safety of the traffic signal control operation, thus minimizing our liability. The new traffic signal cabinets will provide the city's signal technicians with enhanced diagnostic tools to troubleshoot intersection malfunctions. These enhanced capabilities will facilitate increased intersection reliability and ultimately provide for safer traffic control operations. This project requires no new design, no right-of-way acquisition and no construction. This project is consistent with the regional transportation program as well as the local Capital Improvement Program.

### **C. Define ITS Subsystems, Architecture Flows, Communications & Arterial ITS Applications**

<u><a href="http://www.iteris.com/itsarch/html/entity/pae">SELECT ITS Subsystems:</a></u> <u><a href="http://www.iteris.com/itsarch/html/entity/pae">http://www.iteris.com/itsarch/html/entity/pae</a></u>	Yes or No
Center Subsystem	Yes
Traveler Subsystem	No
Field/Roadside Subsystem	Yes
Vehicle Subsystem	No
Communications Subsystem	No

**Architecture Flows** (Information flows among four subsystems: Traveler, Center, Roadside and Vehicle Subsystems)

[illegible]

<b><u>Communications:</u></b>	Required communications medium for data sharing with other agencies: (if applicable)
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From agency	To agency	data flow	Medium	Existing?	Future (year) mm/yyyy	Check Date with Project Schedule



<u>Arterial ITS applications</u>	Relevant Applications (ENTER: Yes or No)	<u>Applicable ITS User Services Addressed</u> <a href="http://www.iteris.com/itsarch/html/user/userserv.htm">http://www.iteris.com/itsarch/html/user/userserv.htm</a>	<u>Applicable ITS Market Packages</u> <a href="http://www.iteris.com/itsarch/html/mp/mpindex.htm">http://www.iteris.com/itsarch/html/mp/mpindex.htm</a>
1. Traffic Management	Yes	1.6	ATMS01,ATMS03
2. Transit Operations Support	No		
3. Interagency Data Sharing and Control	No		
4. Integrated Traveler Information	No		
5. Archived Data Management	No		
6. Incident Management	Yes	1.7	ATMS08
7. Freeway-Arterial	No		

#### D. Project Budget

- (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed \$1 million per program year per agency.
- (2) Joint projects that involve 3 or more agencies may exceed \$1m in federal cost. Federal cost of each agency's component will not be counted against the \$1m limit.
- (3) There is no limit on the number of projects that may be submitted by an agency, but each project requires the 30 percent local cost match
- (4) For multijurisdictional projects, the federal and local shares of each partnering agency must be shown below.

	Federal Cost	Local Match (min 30%)	Total Cost
Lead Agency	\$539,000.00	\$231,000.00	\$770,000.00
Partnering Agency#1			\$0.00
Partnering Agency#2			\$0.00
Partnering Agency#3			\$0.00
Total	\$539,000.00	\$231,000.00	\$770,000.00
Cost percentage	70.0%	30.0%	

Note: Each participating agency should provide at least 30% local match for its share of the total cost

#### E. Project Schedule

The following project milestones and schedules are based on a typical project procurement process. Please select applicable milestones. Some ITS projects may follow an abbreviated process. ENTER estimated time for such a process

Standard Project Milestones	Default Schedule for Process	Applicable Milestones (ENTER - Yes OR No)	Estimated Time to Milestone (ENTER #Months)	Estimated Date (Enter> mm/yyyy)
Apply for ADOT project number				Feb-2013
Receipt of ADOT project number	Apr-2013	Yes	1	Mar-2013
Initial DCR	May-2013	Yes	2	Apr-2013
Final DCR	Jun-2013	Yes	3	May-2013
30% Preliminary Plans, Cost Estimate and Report	Aug-2013	No		NA
60% Preliminary Plans, Cost Estimate and Report	Oct-2013	No		NA
Final Preliminary Plans, Cost Estimate and Report	Dec-2013	No		NA
Environmental Clearance	Oct-2013	Yes	4	Jun-2013
Utility Clearance	Nov-2013	Yes	4	Jun-2013
Right-of-Way Clearance	Aug-2013	Yes	4	Jun-2013
Approval of IGA	Feb-2014	No	14	NA
Obligation authority of Federal funds	Mar-2014	Yes	6	Aug-2013
Advertised Date	May-2014	Yes	7	Sep-2013
Final Deployment	Nov-2014	Yes	13	Mar-2014

#### **F. System Maintenance and Operations**

Current staff resources available for ITS operations at the local agency (FTEs)	5
Additional staff resources required for fully utilizing features added by project (FTEs)	0
Estimated current annual ITS operations & maintenance budget	\$160,000
Estimated additional annual operations & maintenance funds required for features added by project	\$0
Estimated DATE from when required additional O&M funds will be available	Aug-2013

**Other comments:**

**G. Systems Engineering Analysis Requirement**

**Commitment to address the federal requirement for Systems Engineering Analysis:**

Agency's intent to follow the process described in the 'V' diagram (See Appendix A of Arterial ITS Plan) during the project development process

The project sponsor or lead agency intends to incorporate the Systems Engineering Analysis in the scope of work for the project's Design Concept Report. The Systems Engineering Analysis will be carried out based on the document Systems Engineering for ITS published by FHWA in January 2007. A guidelines document prepared by FHWA (AZ office) and MAG dated August 2006 is also available (both are posted at the MAG website).